U.S.S.N 09/768,189
Attorney Docket N .: PKZ-021CP

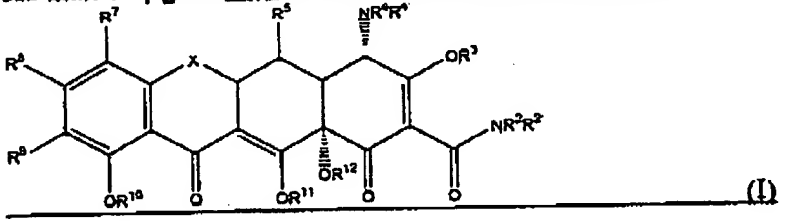
Examiner: B. Badio
Group Art Unit: 1616

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for controlling *Cryptosporidium parvum* in a mammal, comprising administering to said mammal an effective amount of a tetracycline compound, such that *Cryptosporidium parvum* is controlled in said mammal, ~~wherein said tetracycline compound inhibits more than 70% of *Cryptosporidium parvum* at a concentration less than 10 μg/ml~~ wherein said tetracycline compound is of formula I:



(I)

wherein:

X is $CHC(R^{13}Y'Y)$, CHR^6, S, NR^6, or O;

R^2, R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, or heteroaromatic;

$R^{2'}$, R^3, R^{10}, R^{11} and R^{12} are each hydrogen;

R^5 is hydroxy, hydrogen, thiol, alkanoyl, aroyl, alkaroyl, aryl, heteroaromatic, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R^6, R^7, and R^8 are each independently hydrogen, hydroxyl, halogen, thiol, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R^9 is alkyl or alkenyl;

R^{13} is hydrogen, hydroxy, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

Y' and Y are each independently hydrogen, halogen, hydroxyl, cyano, sulfhydryl, amino, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl, and pharmaceutically acceptable salts thereof.

2. (Cancelled)

3. (Currently Amended) The method of claim 1~~2~~, wherein R^2, $R^{2'}$, R^3, R^{10}, R^{11}, and R^{12} are each hydrogen.

4. (Currently Amended) The method of claim 1~~2~~, wherein R^4 and $R^{4'}$ are each alkyl.

5. (Previously Presented) The method of claim 4, wherein R^4 and $R^{4'}$ are each methyl.

Claims 6-8 (Cancelled).

9. (Currently Amended) The method of claim 1~~2~~, wherein R^5 is hydroxyl.

Claims 10, 11 (Cancelled).

12. (Currently Amended) The method of claim 1~~2~~, wherein X is CHR^6.

13. (Original) The method of claim 12, wherein R^6 is alkyl.

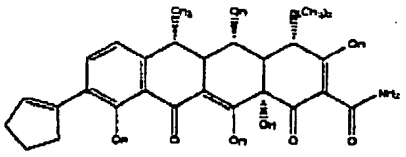
14. (Original) The method of claim 13, wherein R^6 is methyl.

Claims 15-20 (Cancelled).

21. (Currently Amended) The method of claim 1~~20~~, wherein R^9 is cyclopentenyl.

Claims 22-27 (Cancelled).

28. (Original) The method of claim 1, wherein said tetracycline compound is of the formula:



Claim 29-32 (Cancelled).

33. (Original) The method of claim 1, wherein said mammal is immunocompetent.

34. (Original) The method of claim 1, wherein said mammal is immunocompromised.

35. (Original) The method of claim 1, wherein said mammal is a human.

36. (Original) The method of claim 35, wherein said human has an immunodeficiency.

37. (Original) The method of claim 36, wherein said human has AIDS.

38. (Original) The method of claim 36, wherein said human has undergone chemotherapy.

39. (Original) The method of claim 1, wherein said effective amount is effective to treat a *Cryptosporidium parvum* related disorder in said mammal.

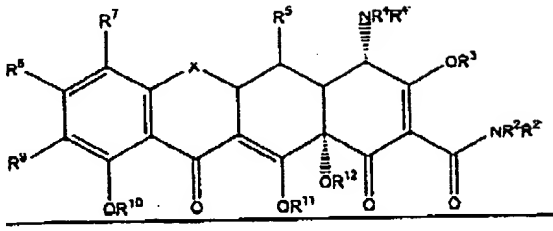
40. (Original) The method of claim 37, wherein said *Cryptosporidium parvum* related disorder is diarrhea.

41. (Original) The method of claim 37, wherein said *Cryptosporidium parvum* related disorder is cryptosporidiosis.

Claims 42, 43 (Cancelled).

44. (Currently Amended) The method of claim ~~143~~, wherein said tetracycline compound inhibits more than 70% of *Cryptosporidium parvum* at a concentration less than 1 μg/ml.

45. (Currently Amended) A method for treating a *Cryptosporidium parvum* related disorder in a mammal, comprising administering to said mammal an effective amount of a tetracycline compound such that said mammal is treated for said disorder, ~~wherein said tetracycline compound inhibits more than 70% of *Cryptosporidium parvum* at a concentration less than 10 μg/ml.~~, wherein said tetracycline compound is of formula I:



(I)

wherein:

X is $CHC(R^{13}Y'Y)$, CHR^6, S, NR^6, or O;

R^2, R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, or heteroaromatic;

$R^{2'}$, R^3, R^{10}, R^{11} and R^{12} are each hydrogen;

R^5 is hydroxy, hydrogen, thiol, alkanoyl, aroyl, alkaroyl, aryl, heteroaromatic, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R^6, R^7, and R^8 are each independently hydrogen, hydroxyl, halogen, thiol, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

R^9 is alkyl or alkenyl;

R^{13} is hydrogen, hydroxy, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl;

Y' and Y are each independently hydrogen, halogen, hydroxyl, cyano, sulfhydryl, amino, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, or an arylalkyl, and pharmaceutically acceptable salts thereof.

46. (Cancelled).

47. (Currently Amended) The method of claim 456, wherein R^2, $R^{2'}$, R^3, R^{10}, R^{11}, and R^{12} are each hydrogen.

48. (Original) The method of claim 47, wherein R^4 and $R^{4'}$ are each methyl.

49. (Original) The method of claim 48, wherein R^5 is alkanoyl, an ester group, a hydroxyl group or hydrogen.

50. (Original) The method of claim 48, wherein X is S or CHR^6.

51. (Original) The method of claim 50, wherein R^6 is alkyl.

Claims 52-54 (Cancelled).

55. (Currently Amended) The method of claim 4554, wherein R^9 is cyclopentenyl.

Claims 56, 57 (Cancelled).

58. (Currently Amended) The method of claim 4546, wherein said tetracycline compound is ~~selected from the group consisting of 5-propionyl-6-cyclopentylsulfanylmethyl doxycycline; thiatetracycline;~~ 9-cyclopent-1-enyl-doxycycline~~; 5-propionyl-9-tert-butyl-doxycycline; 9-tert-butyl-doxycycline; 9-cyclohex-1-enylethynyl minocycline; and 6-cyclopentylsulfanylmethyl doxycycline~~.

59. (Currently Amended) The method of claim 4546, wherein said mammal is immunocompetent.

60. (Currently Amended) The method of claim 4546, wherein said mammal is immunocompromised.

61. (Currently Amended) The method of claim 4546, wherein said mammal is a human.

62. (Original) The method of claim 61, wherein said human is immunodeficient.

63. (Original) The method of claim 62, wherein said human has AIDS.

64. (Original) The method of claim 62, wherein said human has undergone chemotherapy.

65. (Currently Amended) The method of claim 4546, wherein said effective amount is effective to treat a *Cryptosporidium parvum* related disorder in said mammal.

66. (Original) The method of claim 65, wherein said *Cryptosporidium parvum* related disorder is diarrhea.

67. (Original) The method of claim 65, wherein said *Cryptosporidium parvum* related disorder is cryptosporidiosis.

68. (Currently Amended) The method of claim 4546, further comprising the administration of a pharmaceutically acceptable carrier.

69. (Currently Amended) The method of claim 4546, further comprising the administration of a supplementary anti-*Cryptosporidium parvum* agent.

70. (Currently Amended) The method of claim 4546, wherein said supplementary agent is paromomycin.

Claims 71-83 (Cancelled).